

# **EPA Pilot Study on Soil Excavation Activities and Lead in Water**



# Outline

- Why Did EPA Test the Water?
- Lead Service Lines
  - Corrosion Control
  - Physical Disturbances
- How Did EPA Test the Water?
- Water Testing Results
- What's Being Done?
- What Can Residents Do?



# Why Did EPA Test the Water?

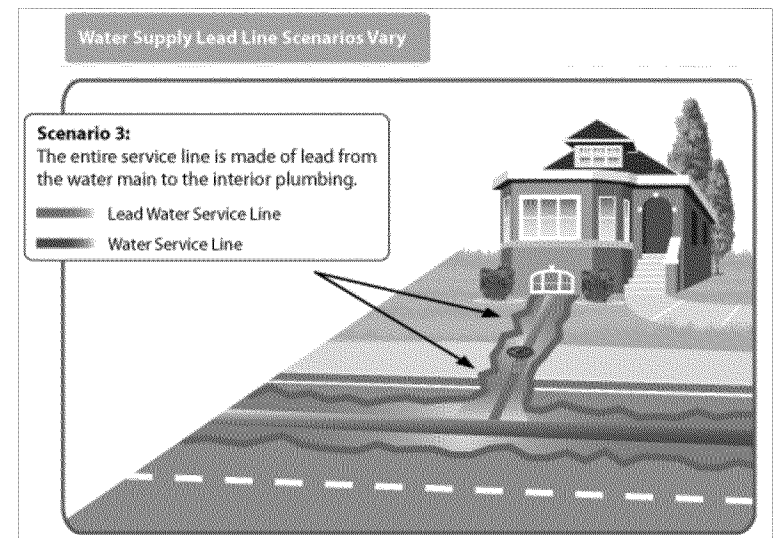
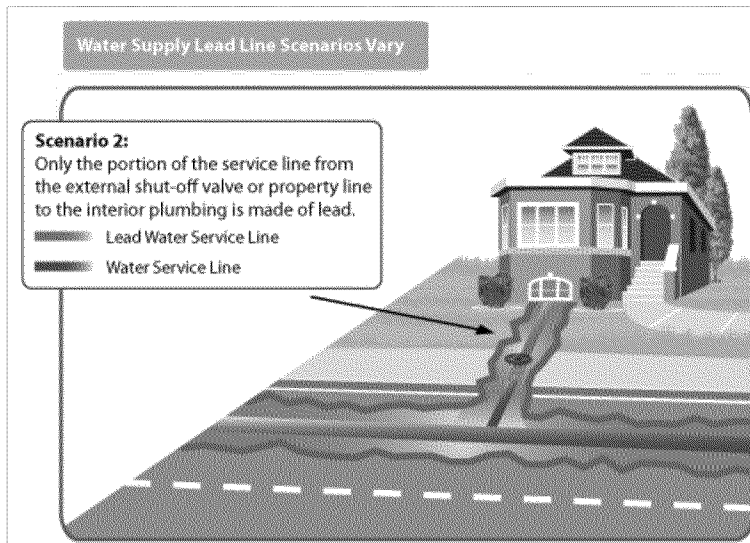
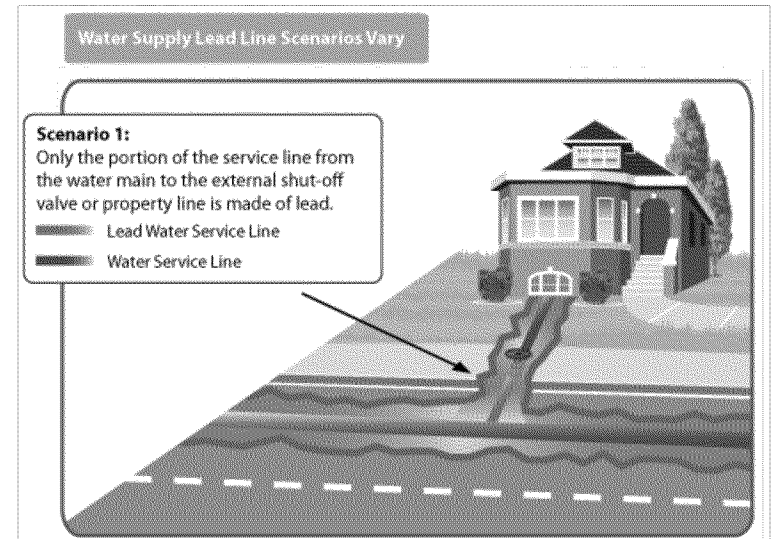
- Sources of Lead
  - Lead service lines and associated galvanized iron pipe, brass plumbing fittings/fixtures, leaded solder
- East Chicago has a large percentage of service lines made of lead.
  - Same as many other cities



# Why Did EPA Test the Water?

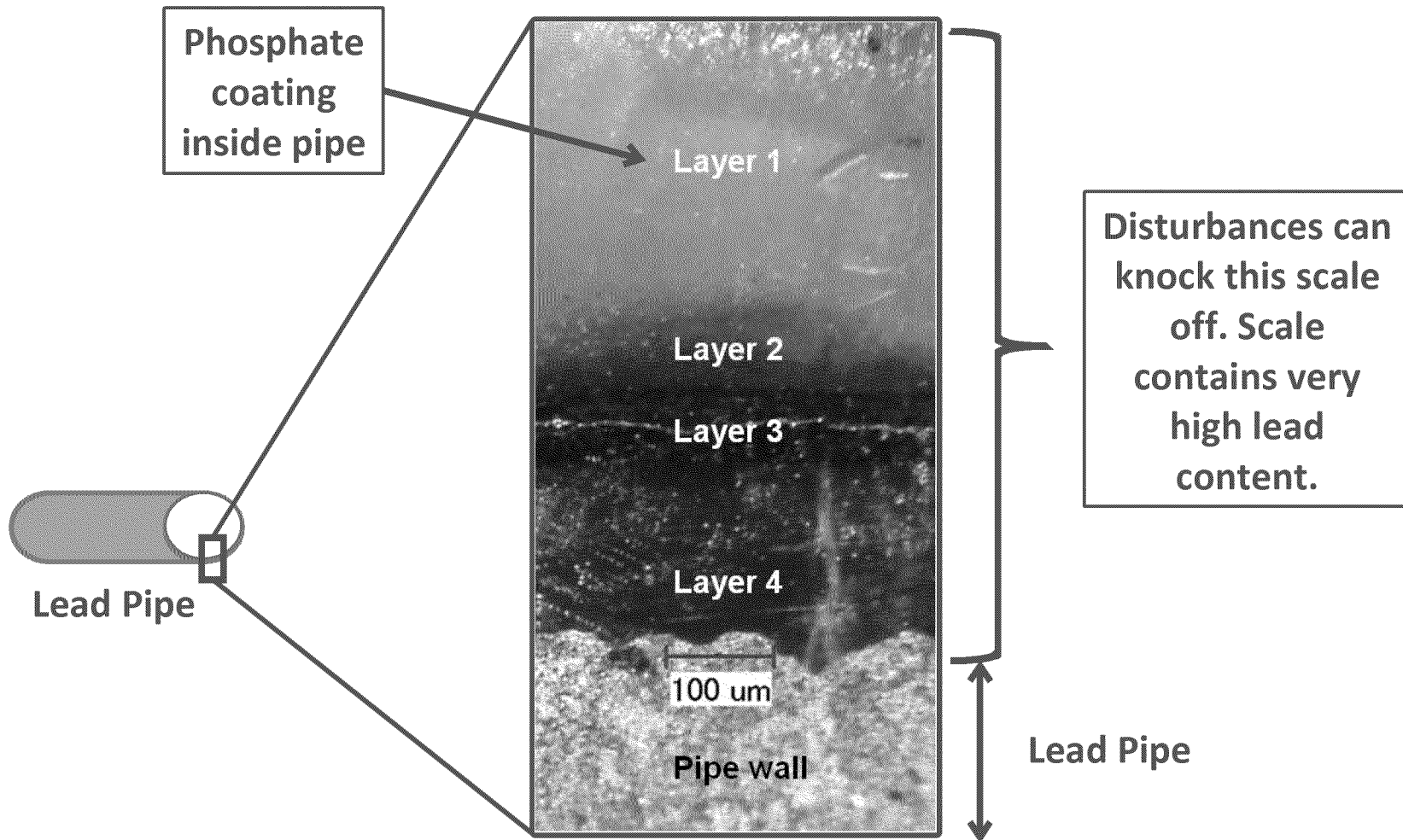
- Street or construction work can sometimes disturb service lines, releasing high lead into the water
- EPA did these tests on a pilot basis out of abundance of caution.
- First 43 homes excavated in zones 2 and 3.

# Lead Service Lines





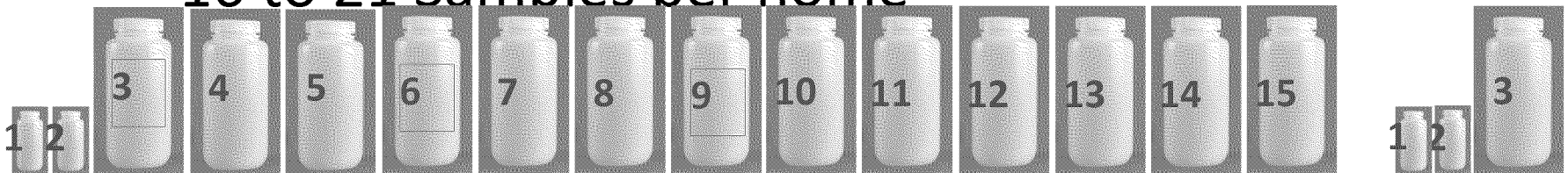
# Treatment and Physical Disturbances





# How Did EPA Test the Water?

- EPA used 'sequential sampling' to test water
  - Different from required compliance testing by city.
- Sequential sampling is a more rigorous series of testing
  - Used by EPA and researchers in previous studies.
- Compliance testing measures lead levels throughout the city's entire drinking water distribution system.
  - One sample per home
- Sequential sampling focuses on single homes in depth.
  - 16 to 21 Samples per home



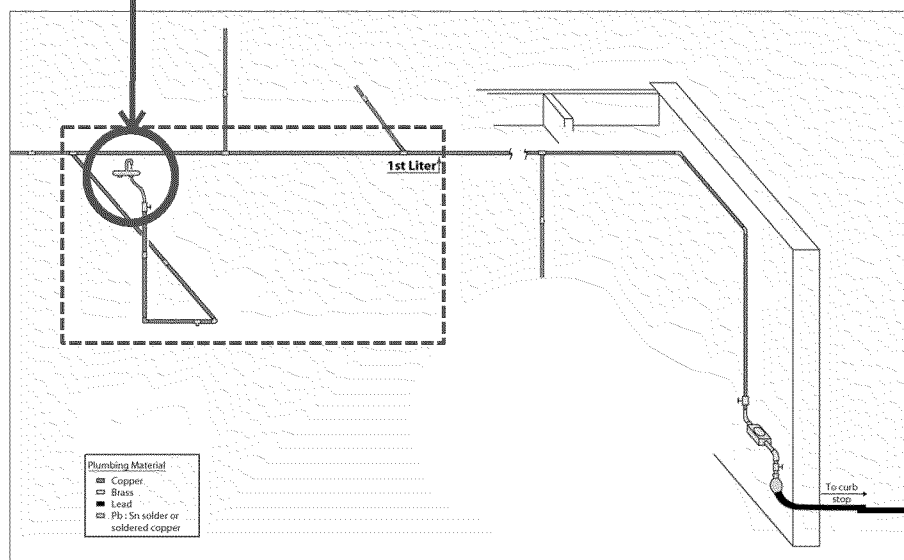




# What is 'Sequential Sampling'?

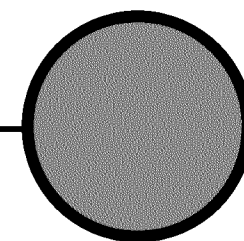
A set of samples, collected one right after another that captures all of the water in the plumbing from the kitchen tap to the water main

Kitchen tap



For comparison, the red dashed box indicates what is captured by one 1-liter sample

Service Line



Residence

NOT TO SCALE

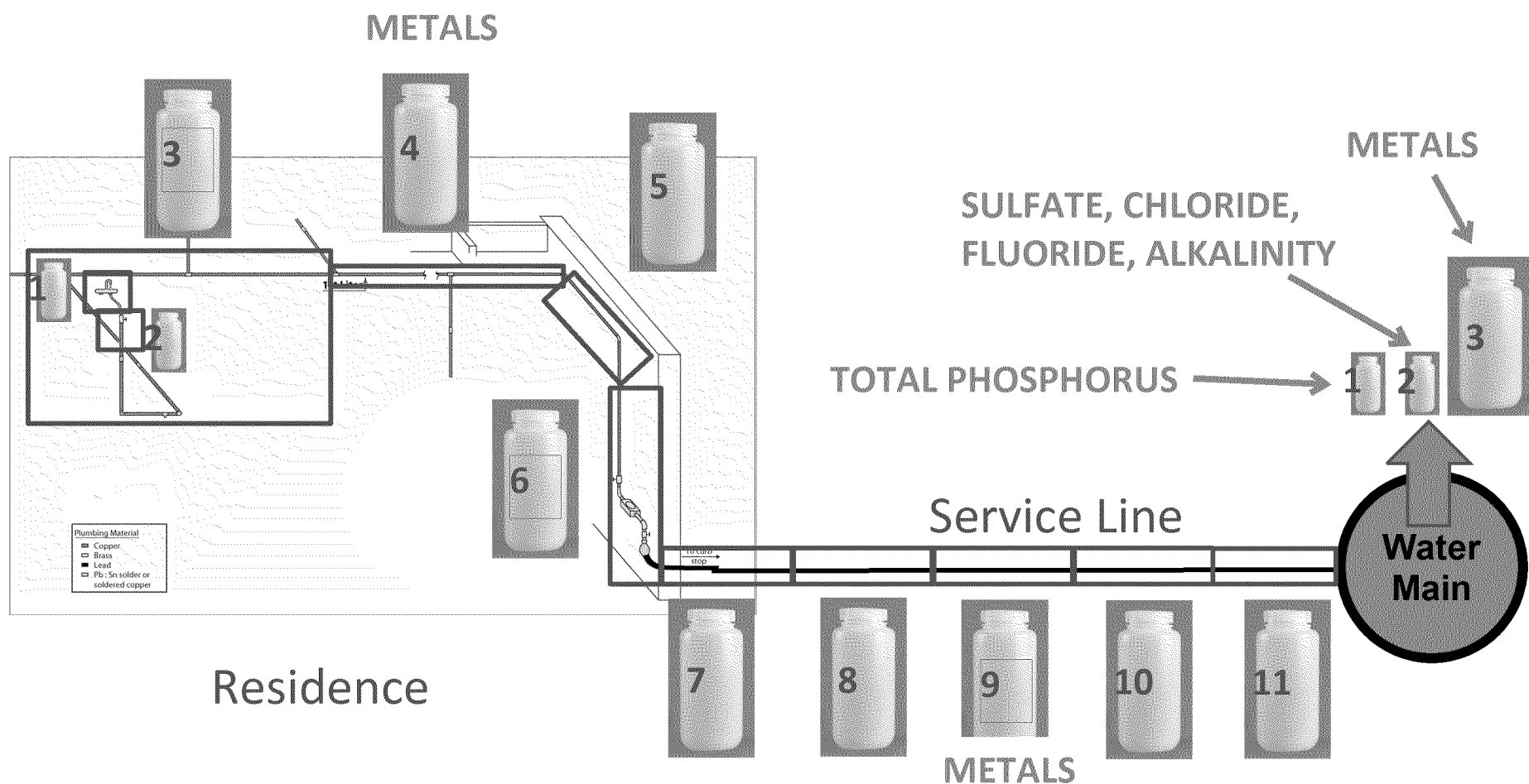
Water





# What is 'Sequential Sampling'?

Sampling is for Diagnostic Purposes, not Compliance  
16 to 21 samples collected at each home before and after soil clean-up

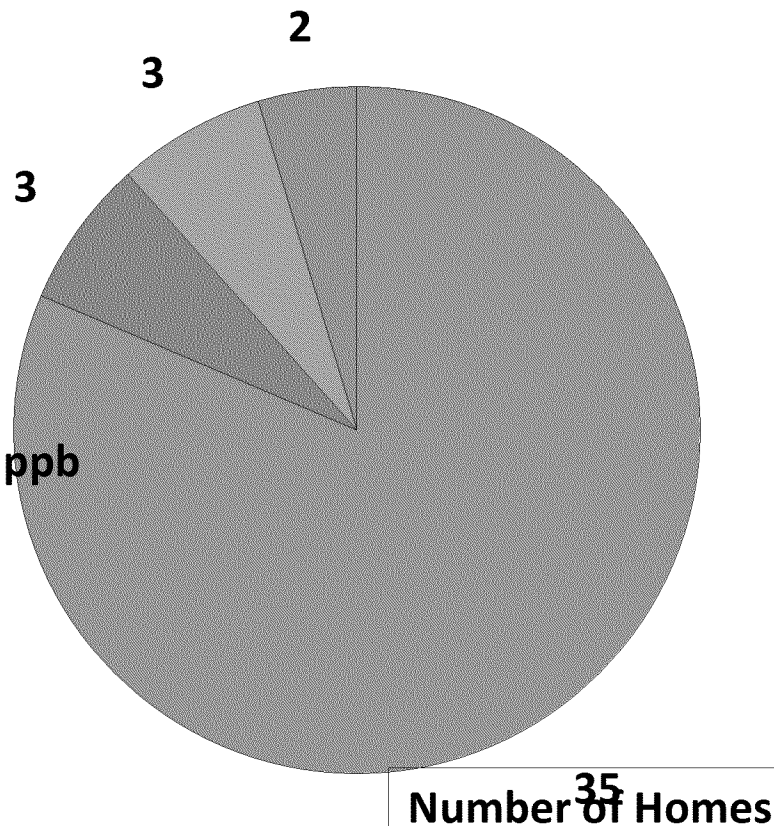




# What Did the Results Show?

## Summary of Lead Results (Before and After Soil Clean-up)

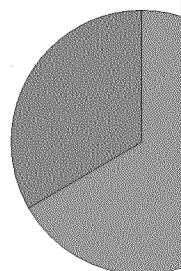
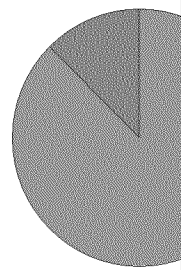
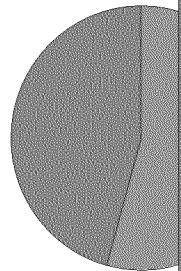
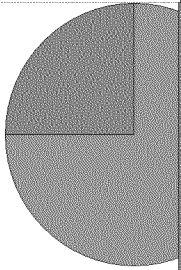
- Lead Levels were the same or lower after work
- Lead Levels were higher after work
- Lead Levels were higher after work, but below 15 ppb
- Lead testing after work not completed yet



**Before excavation, 18 of 43 (42%) homes had lead levels in tap water that exceeded 15 parts per billion (ppb).**



# What Did the Results Show





# What Did the Results Show?

- Good chlorine, stable pH, but low phosphate
- Flushing after completion of soil clean-up significantly lowered lead levels at some homes with high lead.
- EPA is reviewing data/information to determine whether excavation is affecting lead levels in zones 2 and 3.



# What is Being Done by State/City?

- IDEM has been working with the City to optimize the dosage of the current corrosion control treatment.
- The treatment forms a protective coating on the interior of the pipes to reduce lead levels in the water.
- East Chicago is exploring funding for replacing lead service lines.



# What is Being Done by EPA?

- Potential revisions to the Lead and Copper Rule at the national level.
  - Goal: Improve the effectiveness of the rule in reducing exposure to lead and copper from drinking water.
  - EPA anticipates proposed rule changes soon.
- Research to help identify homes with lead service lines (scheduled for 2017).
- Incorporating flushing into standard procedures for residential soil clean-up.



# What Can Residents Do?

- Use an NSF-53 Certified Water Filter for cooking, drinking and baby formula.
- Run the kitchen tap on cold for at least 5 minutes before using any tap water for drinking or cooking or making baby formula.
- Use only cold water for eating, drinking and brushing your teeth.
- Boiling water will not remove lead and can concentrate it.
- Clean your faucet aerators on a regular basis to remove particles that may contain lead
- More advice is available at [www.epa.gov/il/advice-chicago-residents-about-lead-drinking-water](http://www.epa.gov/il/advice-chicago-residents-about-lead-drinking-water)





# Still Have Questions?

East Chicago Water Sampling Data:

<https://www.epa.gov/uss-lead-superfund-site/uss-lead-drinking-water-pilot-study>

Information on Lead and Copper Rule Long-Term Revisions:

[www.epa.gov/dwstandardsregulations/lead-and-copper-rule-long-term-revisions](http://www.epa.gov/dwstandardsregulations/lead-and-copper-rule-long-term-revisions)

**Stop by the Water Booth!**